



# **Ursa Operating Company, LLC**

**Rockies Region  
Valley Farms L  
42D-11-06-92**

**Wellbore #1**

**Plan: Design #1**

## **Standard Planning Report**

**26 November, 2013**



<b>Database:</b>	MasterDB	<b>Local Co-ordinate Reference:</b>	Well 42D-11-06-92
<b>Company:</b>	Ursa Operating Company, LLC	<b>TVD Reference:</b>	42D-11-06-92 @ 5564.4usft (PAD Est KB)
<b>Project:</b>	Rockies Region	<b>MD Reference:</b>	42D-11-06-92 @ 5564.4usft (PAD Est KB)
<b>Site:</b>	Valley Farms L	<b>North Reference:</b>	True
<b>Well:</b>	42D-11-06-92	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

<b>Project</b>	Rockies Region		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Central Zone		

Site		Valley Farms L			
Site Position:		Northing:	1,627,813.25 usft	Latitude:	39° 32' 16.142 N
From:	Lat/Long	Easting:	2,399,633.87 usft	Longitude:	107° 37' 44.058 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-1.34 °

Well	42D-11-06-92, SHL LAT: 39.537783611 LONG: -107.628982431					
Well Position	+N/-S	-12.2 usft	Northing:	1,627,801.54 usft	Latitude:	39° 32' 16.021 N
	+E/-W	-21.8 usft	Easting:	2,399,611.78 usft	Longitude:	107° 37' 44.337 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	5,564.4 usft	Ground Level:	5,549.0 usft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF200510	11/13/2013	9.84	65.79	52,120

<b>Design</b>	Design #1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	13.91

<b>Plan Sections</b>										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
550.0	0.00	0.00	550.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,540.5	29.72	13.91	1,496.7	243.8	60.4	3.00	3.00	0.00	13.91	
3,774.9	29.72	13.91	3,437.3	1,318.9	326.5	0.00	0.00	0.00	0.00	
4,765.5	0.00	0.00	4,384.0	1,562.7	386.9	3.00	-3.00	0.00	180.00	42D-11-06-92 TGT
7,549.5	0.00	0.00	7,168.0	1,562.7	386.9	0.00	0.00	0.00	0.00	

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<b>Project:</b>	Rockies Region	<b>MD Reference:</b>	42D-11-06-92 @ 5564.4usft (PAD Est KB)
<b>Site:</b>	Valley Farms L	<b>North Reference:</b>	True
<b>Well:</b>	42D-11-06-92	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
550.0	0.00	0.00	550.0	0.0	0.0	0.0	0.00	0.00	0.00
Start Build 3.00									
600.0	1.50	13.91	600.0	0.6	0.2	0.7	3.00	3.00	0.00
700.0	4.50	13.91	699.8	5.7	1.4	5.9	3.00	3.00	0.00
800.0	7.50	13.91	799.3	15.9	3.9	16.3	3.00	3.00	0.00
900.0	10.50	13.91	898.0	31.0	7.7	32.0	3.00	3.00	0.00
1,000.0	13.50	13.91	995.8	51.2	12.7	52.8	3.00	3.00	0.00
1,100.0	16.50	13.91	1,092.4	76.3	18.9	78.6	3.00	3.00	0.00
1,200.0	19.50	13.91	1,187.5	106.3	26.3	109.5	3.00	3.00	0.00
1,300.0	22.50	13.91	1,280.9	141.1	34.9	145.4	3.00	3.00	0.00
1,400.0	25.50	13.91	1,372.2	180.6	44.7	186.0	3.00	3.00	0.00
1,500.0	28.50	13.91	1,461.3	224.7	55.6	231.4	3.00	3.00	0.00
1,540.5	29.72	13.91	1,496.7	243.8	60.4	251.2	3.00	3.00	0.00
Start 2234.4 hold at 1540.5 MD									
1,600.0	29.72	13.91	1,548.4	272.4	67.4	280.6	0.00	0.00	0.00
1,700.0	29.72	13.91	1,635.2	320.5	79.4	330.2	0.00	0.00	0.00
1,800.0	29.72	13.91	1,722.1	368.6	91.3	379.8	0.00	0.00	0.00
1,900.0	29.72	13.91	1,808.9	416.8	103.2	429.3	0.00	0.00	0.00
2,000.0	29.72	13.91	1,895.8	464.9	115.1	478.9	0.00	0.00	0.00
2,100.0	29.72	13.91	1,982.6	513.0	127.0	528.5	0.00	0.00	0.00
2,200.0	29.72	13.91	2,069.5	561.1	138.9	578.1	0.00	0.00	0.00
2,300.0	29.72	13.91	2,156.3	609.2	150.8	627.6	0.00	0.00	0.00
2,400.0	29.72	13.91	2,243.2	657.3	162.8	677.2	0.00	0.00	0.00
2,500.0	29.72	13.91	2,330.0	705.5	174.7	726.8	0.00	0.00	0.00
2,600.0	29.72	13.91	2,416.9	753.6	186.6	776.3	0.00	0.00	0.00
2,700.0	29.72	13.91	2,503.7	801.7	198.5	825.9	0.00	0.00	0.00
2,800.0	29.72	13.91	2,590.6	849.8	210.4	875.5	0.00	0.00	0.00
2,900.0	29.72	13.91	2,677.4	897.9	222.3	925.0	0.00	0.00	0.00
3,000.0	29.72	13.91	2,764.3	946.0	234.2	974.6	0.00	0.00	0.00
3,100.0	29.72	13.91	2,851.1	994.2	246.1	1,024.2	0.00	0.00	0.00
3,200.0	29.72	13.91	2,938.0	1,042.3	258.1	1,073.8	0.00	0.00	0.00
3,300.0	29.72	13.91	3,024.8	1,090.4	270.0	1,123.3	0.00	0.00	0.00
3,400.0	29.72	13.91	3,111.7	1,138.5	281.9	1,172.9	0.00	0.00	0.00
3,500.0	29.72	13.91	3,198.5	1,186.6	293.8	1,222.5	0.00	0.00	0.00
3,563.2	29.72	13.91	3,253.4	1,217.0	301.3	1,253.8	0.00	0.00	0.00
Williams Fork									
3,600.0	29.72	13.91	3,285.4	1,234.7	305.7	1,272.0	0.00	0.00	0.00
3,700.0	29.72	13.91	3,372.2	1,282.9	317.6	1,321.6	0.00	0.00	0.00
3,774.9	29.72	13.91	3,437.3	1,318.9	326.5	1,358.7	0.00	0.00	0.00
Start Drop -3.00									
3,800.0	28.96	13.91	3,459.1	1,330.8	329.5	1,371.0	3.00	-3.00	0.00
3,900.0	25.96	13.91	3,547.9	1,375.6	340.6	1,417.1	3.00	-3.00	0.00
4,000.0	22.96	13.91	3,638.9	1,415.8	350.5	1,458.5	3.00	-3.00	0.00
4,100.0	19.96	13.91	3,731.9	1,451.3	359.3	1,495.1	3.00	-3.00	0.00
4,200.0	16.96	13.91	3,826.8	1,482.1	366.9	1,526.8	3.00	-3.00	0.00
4,300.0	13.96	13.91	3,923.1	1,507.9	373.3	1,553.5	3.00	-3.00	0.00
4,400.0	10.96	13.91	4,020.8	1,528.9	378.5	1,575.0	3.00	-3.00	0.00
4,500.0	7.96	13.91	4,119.4	1,544.8	382.5	1,591.5	3.00	-3.00	0.00

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<b>Project:</b>	Rockies Region	<b>MD Reference:</b>	42D-11-06-92 @ 5564.4usft (PAD Est KB)
<b>Site:</b>	Valley Farms L	<b>North Reference:</b>	True
<b>Well:</b>	42D-11-06-92	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,600.0	4.96	13.91	4,218.7	1,555.8	385.2	1,602.7	3.00	-3.00	0.00
4,700.0	1.96	13.91	4,318.6	1,561.6	386.6	1,608.8	3.00	-3.00	0.00
4,765.5	0.00	0.00	4,384.0	1,562.7	386.9	1,609.9	3.00	-3.00	0.00
Start 2784.0 hold at 4765.5 MD - 42D-11-06-92 TGT									
4,765.9	0.00	0.00	4,384.4	1,562.7	386.9	1,609.9	0.00	0.00	0.00
Top of Gas									
4,800.0	0.00	0.00	4,418.5	1,562.7	386.9	1,609.9	0.00	0.00	0.00
4,900.0	0.00	0.00	4,518.5	1,562.7	386.9	1,609.9	0.00	0.00	0.00
5,000.0	0.00	0.00	4,618.5	1,562.7	386.9	1,609.9	0.00	0.00	0.00
5,100.0	0.00	0.00	4,718.5	1,562.7	386.9	1,609.9	0.00	0.00	0.00
5,200.0	0.00	0.00	4,818.5	1,562.7	386.9	1,609.9	0.00	0.00	0.00
5,300.0	0.00	0.00	4,918.5	1,562.7	386.9	1,609.9	0.00	0.00	0.00
5,400.0	0.00	0.00	5,018.5	1,562.7	386.9	1,609.9	0.00	0.00	0.00
5,500.0	0.00	0.00	5,118.5	1,562.7	386.9	1,609.9	0.00	0.00	0.00
5,600.0	0.00	0.00	5,218.5	1,562.7	386.9	1,609.9	0.00	0.00	0.00
5,700.0	0.00	0.00	5,318.5	1,562.7	386.9	1,609.9	0.00	0.00	0.00
5,800.0	0.00	0.00	5,418.5	1,562.7	386.9	1,609.9	0.00	0.00	0.00
5,900.0	0.00	0.00	5,518.5	1,562.7	386.9	1,609.9	0.00	0.00	0.00
6,000.0	0.00	0.00	5,618.5	1,562.7	386.9	1,609.9	0.00	0.00	0.00
6,100.0	0.00	0.00	5,718.5	1,562.7	386.9	1,609.9	0.00	0.00	0.00
6,200.0	0.00	0.00	5,818.5	1,562.7	386.9	1,609.9	0.00	0.00	0.00
6,254.9	0.00	0.00	5,873.4	1,562.7	386.9	1,609.9	0.00	0.00	0.00
Cameo									
6,300.0	0.00	0.00	5,918.5	1,562.7	386.9	1,609.9	0.00	0.00	0.00
6,400.0	0.00	0.00	6,018.5	1,562.7	386.9	1,609.9	0.00	0.00	0.00
6,500.0	0.00	0.00	6,118.5	1,562.7	386.9	1,609.9	0.00	0.00	0.00
6,600.0	0.00	0.00	6,218.5	1,562.7	386.9	1,609.9	0.00	0.00	0.00
6,700.0	0.00	0.00	6,318.5	1,562.7	386.9	1,609.9	0.00	0.00	0.00
6,800.0	0.00	0.00	6,418.5	1,562.7	386.9	1,609.9	0.00	0.00	0.00
6,900.0	0.00	0.00	6,518.5	1,562.7	386.9	1,609.9	0.00	0.00	0.00
7,000.0	0.00	0.00	6,618.5	1,562.7	386.9	1,609.9	0.00	0.00	0.00
7,100.0	0.00	0.00	6,718.5	1,562.7	386.9	1,609.9	0.00	0.00	0.00
7,200.0	0.00	0.00	6,818.5	1,562.7	386.9	1,609.9	0.00	0.00	0.00
7,249.9	0.00	0.00	6,868.4	1,562.7	386.9	1,609.9	0.00	0.00	0.00
Rollins									
7,300.0	0.00	0.00	6,918.5	1,562.7	386.9	1,609.9	0.00	0.00	0.00
7,400.0	0.00	0.00	7,018.5	1,562.7	386.9	1,609.9	0.00	0.00	0.00
7,500.0	0.00	0.00	7,118.5	1,562.7	386.9	1,609.9	0.00	0.00	0.00
7,549.5	0.00	0.00	7,168.0	1,562.7	386.9	1,609.9	0.00	0.00	0.00
TD at 7549.5									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
42D-11-06-92 TGT	0.00	0.00	4,384.0	1,562.7	386.9	1,629,354.76	2,400,035.20	39° 32' 31.466 N	107° 37' 39.398 W
- hit/miss target									
- Shape									
- plan hits target center									
- Rectangle (sides W100.0 H40.0 D2,784.0)									

<b>Database:</b>	MasterDB	<b>Local Co-ordinate Reference:</b>	Well 42D-11-06-92
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<b>Project:</b>	Rockies Region	<b>MD Reference:</b>	42D-11-06-92 @ 5564.4usft (PAD Est KB)
<b>Site:</b>	Valley Farms L	<b>North Reference:</b>	True
<b>Well:</b>	42D-11-06-92	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,563.2	3,253.4	Williams Fork		0.00	
4,765.9	4,384.4	Top of Gas		0.00	
6,254.9	5,873.4	Cameo		0.00	
7,249.9	6,868.4	Rollins		0.00	

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
550.0	550.0	0.0	0.0	Start Build 3.00
1,540.5	1,496.7	243.8	60.4	Start 2234.4 hold at 1540.5 MD
3,774.9	3,437.3	1,318.9	326.5	Start Drop -3.00
4,765.5	4,384.0	1,562.7	386.9	Start 2784.0 hold at 4765.5 MD
7,549.5	7,168.0	1,562.7	386.9	TD at 7549.5



Well Name: 42D-11-06-92  
Surface Location: Valley Farms L  
North American Datum 1983, US State Plane 1983, Colorado Central Zone  
Ground Elevation: 5549.0  
+N/-S +E/-W Northing Easting Latitude Longitude  
0.0 0.0 1627801.54 2399611.78 39° 32' 16.021 N 107° 37' 44.337 W  
PAD Est KB 42D-11-06-92 @ 5564.4usft (PAD Est KB)



Azimuths to True North  
Magnetic North: 9.85°  
Magnetic Field  
Strength: 52120.0snT  
Dip Angle: 65.79°  
Date: 11/13/2013  
Model: IGRF200510

Valley Farms L  
42D-11-06-92  
Design #1  
11:42, November 26 2013

#### WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
42D-11-06-92 TGT	4384.0	1562.7	386.9	1629354.76	2400035.20	39° 32' 31.466 N	107° 37' 39.398 W	Rectangle (Sides: L40.0 W100.0)

#### SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	550.0	0.00	0.00	550.0	0.0	0.0	0.00	0.00	0.0	
3	1540.5	29.72	13.91	1496.7	243.8	60.4	3.00	13.91	251.2	
4	3774.9	29.72	13.91	3437.3	1318.9	326.5	0.00	0.00	1358.7	
5	4765.5	0.00	0.00	4384.0	1562.7	386.9	3.00	180.00	1609.9	42D-11-06-92 TGT
6	7549.5	0.00	0.00	7168.0	1562.7	386.9	0.00	0.00	1609.9	

#### ANNOTATIONS

TVD	MD	Annotation
550.0	550.0	Start Build 3.00
1496.7	1540.5	Start 2234.4 hold at 1540.5 MD
3437.3	3774.9	Start Drop -3.00
4384.0	4765.5	Start 2784.0 hold at 4765.5 MD
7168.0	7549.5	TD at 7549.5

#### FORMATION TOP DETAILS

TVDPath	MDPath	Formation	DipAngle	DipDir
3253.4	3563.2	Williams Fork	0.00	
4384.4	4765.9	Top of Gas	0.00	
5873.4	6254.9	Cameo	0.00	
6868.4	7249.9	Rollins	0.00	

